

## CLAIMS:

1. A heating element comprising an electrically insulating layer and an electrically conductive layer, wherein at least the electrically conductive layer is based on a hybrid sol-gel precursor comprising an organosilane compound.

5 2. A heating element according to claim 1, characterized in that the hybrid sol-gel precursor comprises a compound from the group of alkyl-alkoxysilanes.

3. A heating element according to claim 1 or 2, characterized in that the hybrid sol-gel precursor comprises methyl-trimethoxysilane and/or methyl-triethoxysilane.

10 4. A heating element according to claim 1, characterized in that the electrically insulating layer comprises non-conductive particles.

15 5. A heating element according to claim 4, characterized in that the electrically insulating layer comprises anisotropic, non-conductive particles.

6. A heating element according to claim 1, characterized in that the electrically conductive layer comprises conductive and/or semi-conductive particles, as well as an amount of insulating particles in a quantity of 0-20 % by volume.

20 7. A heating element according to claim 6, characterized in that the electrically conductive layer comprises metal particles.

25 8. A heating element according to claim 7, characterized in that the electrically conductive layer comprises silver or silver alloy particles.

9. A heating element according to claim 6, characterized in that the electrically conductive layer comprises graphite or carbon-black particles.

10. A heating element according to claim 1, characterized in that the electrically conductive layer does not exceed 30  $\mu\text{m}$  in thickness and preferably does not exceed 15  $\mu\text{m}$  in thickness.

5 11. A heating element according to claim 1 comprising an insulating layer having a thickness of 25-100  $\mu\text{m}$ , preferably 35-80  $\mu\text{m}$ .

12. A heating element according to any of claims 1-11, applied on an aluminum or aluminum alloy substrate.

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13. An electrical domestic appliance comprising at least a heating element in accordance with any one of claims 1-11.

14. An electrical domestic appliance according to claim 13, characterized in that  
15 the electrical domestic appliance comprises a (steam) iron, hair dryer, hair styler, steamer and steam cleaner, garment cleaner, heated ironing board, facial steamer, kettle, pressurized boiler for system irons and cleaners, coffee maker, deep fat fryer, rice cooker, sterilizer, hot plate, hot-pot, grill, space heater, waffle iron, toaster, oven, or water flow heater.